

Work Order ID 63499

Wednesday, November 03, 2010 10:37:05 A



Page 1

Item ID: D2571

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle, Fwd Out 205

Start Date: 11/3/2010 Start Qty: 12.00



Cust Item ID:

Required Date: 11/17/2010 Req'd Qty: 12.00



Customer:

Reference:

Approvals:

Process Plan:

[Signature]

Date: 10/11-03

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2571

Rev E

100

0.00



HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

Program Batch No. 63499 Double check by: *[Signature]* ☐ 1-Machine Step No 1
per Folio FA051 and inspect per attached Dimension Sheets ☐ 2-Machine Step
No 2 per Folio FA051 and inspect per attached Dimension Sheets ☐ 3-Machine
Step No 3 per Folio FA051 and inspect

B.A. 10/12/01

12

0

110

0.00



CONVENTIONAL MILLING MACHINE

Mill Conv

Memo

0.00

Conventional Milling Machine

Machine keyway as per dwg D2571 & D2572

B.A. 10/12/01

12

0

120

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

B.A. 10/12/01

12

0

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 63499

Wednesday, November 03, 2010 10:37:05 A



Page 2

Item ID:	D2571	Accept		Setup	Start	
Revision ID:					Stop	
Item Name:	Saddle, Fwd Out 205					
Start Date:	11/3/2010	Start Qty:	12.00	Cust Item ID:		
Required Date:	11/17/2010	Req'd Qty:	12.00	Customer:		
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130	QC8- Inspect parts - second check	0.00							
QC	Memo	0.00		10/12/14		12	0		
Quality Control									

140	Chemical Conversion Coat per QSI005 4.1	0.00							
HandFinish	Memo	0.00		10/12/15		12	0		
Hand Finishing									

150	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
Powdercoat	Memo	0.00							
Powder Coating									

START TIME: 8:30 FINISH TIME: 9:00 OVEN TEMPERATURE:



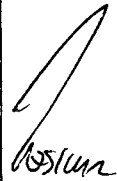
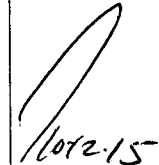
PTO →

12 BL 10-12-16

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2571 PAR #: Fault Category: Unaltered Parts NCR: Yes No DQA: Date: 10/12/16
 Resolution: re-work Disposition: re-work QA: N/C Closed: Date: 10/12/17

NCR: 63499		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/12/15	140	Mild surface corrosion on Parts where they were bolted down for machining & on sides where clamps touch! RC: process - Parts sat exposed for max. 14 days.	 J.A.	Remove corrosion with red scotch brite pad by scuffing gently by hand	J.A. 10/12/15	 10/12/15	 J.A.	 10/12/15

NOTE: Date & initial all entries

[illegible]

Page 3

Accept

[illegible]**Setup Start**

Stop

[illegible]**Cust Item ID:**[illegible]

Customer:

Reference:

Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Operation Description

Set Up/ Run Hours

Tool ID**Tool #****Plan
Code**

Accept Qty

Reject
Qty

Reject Number

Insp. Stamp

160

QC3- Inspect Part Finish

0.00

QC

Memo

0.00

Quality Control

170

Identify as per dwg & Stock Location: 433

0.00

Packaging

Memo

0.00

Packaging

180

QC21- Final Inspection - Work Order Release

0.00

QC

Memo

0.00

Quality Control

10/12/17 ~~18~~
ME
10-12-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, November 03, 2010 10:37:09 AM

Page 1

Work Order ID: 63499



Parent Item: D2571



Parent Item Name: Saddle, Fwd' Out 205


Start Date: 11/3/2010

Required Date: 11/17/2010

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP: I 02.10.02 Re-format; Change to Dwg Rev. D & incorporated
D2572 KJ

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007  Saddle Billet		Manufactured	No			100	Each	42.0000	1	12			

Location

Loc Qty

Loc Code

MAT42

42

46412

2

62713

40

B.A 10/12/01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	63499
Description: Saddle, Fwd Outboard	Part Number:	D2571
Inspection Dwg: D2571 Rev. E		Page 1 of 3

Inspect dimensions highlighted on inspection sheet drawing D2571 Rev. E and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
A	0.438	0.443		0.4410	0.4410	0.4410	0.4410	Vern	GA-01
B	1.745	1.755		1.750	1.750	1.750	1.750	"	"
C	3.495	3.505		3.500	3.500	3.500	3.500	"	"
D	1.745	1.755		1.750	1.750	1.750	1.750	"	"
E	7.990	8.010		8.003	8.003	8.003	8.003	Vern	CNC-07
F	0.490	0.510		0.504	0.506	0.500	0.501	Vern	GA-01
G	0.257	0.262		0.260	0.260	0.260	0.260	"	"
H	0.375	0.380		0.377	0.377	0.377	0.377	"	"
I	0.490	0.510		0.500	0.501	0.501	0.500	"	"
J	1.174	1.184		1.179	1.179	1.179	1.179	"	"
K	0.558	0.578		0.570	0.570	0.569	0.568	"	"
L	1.174	1.184		1.179	1.179	1.179	1.179	"	"
M	1.490	1.500		1.495	1.495	1.495	1.495	"	"
N	2.495	2.505		2.500	2.500	2.500	2.500	"	"
O	3.869	3.879		3.874	3.874	3.874	3.874	"	"
P	0.115	0.135		0.125	0.125	0.125	0.125	Mic	GA-03
Q	0.115	0.135		0.135	0.135	0.135	0.135	Vern	GA-01
R	0.240	0.260		0.250	0.253	0.253	0.252	"	"
S	0.115	0.135		0.127	0.127	0.126	0.126	Mic	118-120
T	0.178	0.198		0.188	0.188	0.188	0.188	R-6	ref.
U	2.940	2.980		2.960	2.960	2.960	2.960	Vern	GA-01
V	0.230	0.250		0.238	0.240	0.240	0.240	"	"
W	0.115	0.135		0.122	0.121	0.121	0.123	Mic	118-120
X	0.308	0.313		0.310	0.310	0.310	0.310	Vern	GA-01
Y	0.760	0.765		0.761	0.761	0.761	0.761	"	"
Z	0.352	0.372		0.364	0.364	0.364	0.365	"	"
AA	0.470	0.530		0.500	0.500	0.500	0.500	R-6	ref.
AB	0.615	0.635		0.627	0.626	0.627	0.626	Vern	GA-01
AC	0.053	0.073		0.063	0.063	0.063	0.063	R-6	ref.
AD	0.240	0.260		0.247	0.247	0.247	0.247	Vern	GA-01
AE	1.375	1.395		1.388	1.390	1.389	1.389	Dial	HAAS3
AF	0.115	0.135		0.125	0.125	0.125	0.125	Vern	GA-01
AG	0.240	0.280		0.240	0.240	0.240	0.240	"	"
AH	0.240	0.260		0.247	0.250	0.250	0.250	"	"
AI	2.000	2.020		2.002	2.0024	2.0015	2.0008	Dial	HAAS3
AJ	0.023	0.043		0.033	0.033	0.033	0.033	R-6	ref.
Accept/Reject									

Measured by:	A. A
Date:	10/12/01

Audited by:	AM
Date:	10/12/14

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.24	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 63499
Description: Saddle, Fwd Outboard	Part Number: D2571
Inspection Dwg: D2571 Rev. E	Page 1 of 3

Inspect dimensions highlighted on inspection sheet drawing D2571 Rev. E and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				#5	#6	#7	#8		
A	0.438	0.443		0.440	0.440	0.440	0.440	Vern	6A-01
B	1.745	1.755		1.750	1.750	1.750	1.750	"	"
C	3.495	3.505		3.500	3.500	3.500	3.500	"	"
D	1.745	1.755		1.750	1.750	1.750	1.750	"	"
E	7.990	8.010		8.002	8.002	8.002	8.002	Vern	CNC-02
F	0.490	0.510		0.501	0.501	0.502	0.502	Vern	6A-01
G	0.257	0.262		0.260	0.260	0.260	0.260	"	"
H	0.375	0.380		0.377	0.377	0.377	0.377	"	"
I	0.490	0.510		0.501	0.501	0.499	0.500	"	"
J	1.174	1.184		1.179	1.179	1.179	1.179	"	"
K	0.558	0.578		0.569	0.570	0.569	0.570	"	"
L	1.174	1.184		1.179	1.179	1.179	1.179	"	"
M	1.490	1.500		1.495	1.495	1.495	1.495	"	"
N	2.495	2.505		2.500	2.500	2.500	2.500	"	"
O	3.869	3.879		3.874	3.874	3.874	3.874	"	"
P	0.115	0.135		0.125	0.125	0.125	0.125	Mic	6A-03
Q	0.115	0.135		0.135	0.135	0.135	0.135	Vern	6A-01
R	0.240	0.260		0.253	0.253	0.253	0.253	"	"
S	0.115	0.135		0.127	0.127	0.126	0.127	Mic	118-120
T	0.178	0.198		0.188	0.188	0.188	0.188	R-6	ref.
U	2.940	2.980		2.960	2.960	2.960	2.960	Vern	6A-01
V	0.230	0.250		0.240	0.240	0.240	0.240	"	"
W	0.115	0.135		0.125	0.126	0.125	0.125	Mic	118-120
X	0.308	0.313		0.310	0.309	0.310	0.310	Vern	6A-01
Y	0.760	0.765		0.761	0.761	0.761	0.761	"	"
Z	0.352	0.372		0.363	0.365	0.362	0.363	"	"
AA	0.470	0.530		0.500	0.500	0.500	0.500	R-6	ref.
AB	0.615	0.635		0.627	0.627	0.627	0.627	Vern	6A-01
AC	0.053	0.073		0.063	0.063	0.063	0.063	R-6	ref.
AD	0.240	0.260		0.249	0.248	0.249	0.249	Vern	6A-01
AE	1.375	1.395		1.389	1.390	1.389	1.3895	Dial	HAAS3
AF	0.115	0.135		0.125	0.125	0.125	0.125	Vern	6A-01
AG	0.240	0.280		0.240	0.240	0.240	0.240	"	"
AH	0.240	0.260		0.250	0.250	0.250	0.250	"	"
AI	2.000	2.020		2.0013	2.0013	2.000	2.003	Dial	HAAS3
AJ	0.023	0.043		0.033	0.033	0.033	0.033	R-6	ref.
Accept/Reject									

Measured by: BA
Date: 10/12/06

Audited by: [Signature]
Date: 10/12/14

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.24	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	[Signature]

DART AEROSPACE LTD	Work Order: 63499
Description: Saddle, Fwd Outboard	Part Number: D2571
Inspection Dwg: D2571 Rev. E	Page 3 of 3

Inspect dimensions highlighted on inspection sheet drawing D2571 Rev. E and record below:

				Recorded Actual Dimensions				By	Date
Dim	Min	Max	Go/No Go Gauge	#9	#10	#11	#12		
A	0.438	0.443		0.440	0.440	0.440	0.440	Vern	GA-01
B	1.745	1.755		1.750	1.750	1.750	1.750	"	"
C	3.495	3.505		3.500	3.500	3.500	3.500	"	"
D	1.745	1.755		1.750	1.750	1.750	1.750	"	"
E	7.990	8.010		8.002	8.002	8.002	8.002	Vern	CNC-02
F	0.490	0.510		0.504	0.508	0.500	0.502	Vern	GA-01
G	0.257	0.262		0.260	0.260	0.260	0.260	"	"
H	0.375	0.380		0.377	0.377	0.377	0.377	"	"
I	0.490	0.510		0.500	0.501	0.501	0.501	"	"
J	1.174	1.184		1.179	1.179	1.179	1.179	"	"
K	0.558	0.578		0.570	0.570	0.569	0.570	"	"
L	1.174	1.184		1.179	1.179	1.179	1.179	"	"
M	1.490	1.500		1.495	1.495	1.495	1.495	"	"
N	2.495	2.505		2.500	2.500	2.500	2.500	"	"
O	3.869	3.879		3.874	3.874	3.874	3.874	"	"
P	0.115	0.135		0.125	0.125	0.125	0.125	Mic	GA-03
Q	0.115	0.135		0.135	0.135	0.135	0.135	Vern	GA-01
R	0.240	0.260		0.250	0.253	0.253	0.253	"	"
S	0.115	0.135		0.127	0.127	0.126	0.127	Mic	118-120
T	0.178	0.198		0.188	0.188	0.188	0.188	R-6	ref.
U	2.940	2.980		2.960	2.960	2.960	2.960	Vern	GA-01
V	0.230	0.250		0.236	0.240	0.240	0.240	"	"
W	0.115	0.135		0.122	0.121	0.121	0.121	Mic	118-120
X	0.308	0.313		0.310	0.310	0.310	0.310	Vern	GA-01
Y	0.760	0.765		0.761	0.761	0.761	0.761	"	"
Z	0.352	0.372		0.364	0.366	0.365	0.364	"	"
AA	0.470	0.530		0.500	0.500	0.500	0.500	R-6	ref.
AB	0.615	0.635		0.627	0.626	0.627	0.628	Vern	GA-01
AC	0.053	0.073		0.063	0.063	0.063	0.063	R-6	ref.
AD	0.240	0.260		0.247	0.247	0.247	0.247	Vern	GA-01
AE	1.375	1.395		1.3885	1.389	1.389	1.389	Dial	HAAS3
AF	0.115	0.135		0.125	0.125	0.125	0.125	Vern	GA-01
AG	0.240	0.280		0.240	0.240	0.240	0.240	"	"
AH	0.240	0.260		0.246	0.250	0.250	0.250	"	"
AI	2.000	2.020		2.002	2.0015	2.0015	2.001	Dial	HAAS3
AJ	0.023	0.043		0.033	0.033	0.033	0.033	R-6	ref.
Accept/Reject									

Measured by:	B.A
Date:	10/12/07

Audited by:	mf
Date:	10/12/14

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.24	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

1. *Chlorophyll *a** and *Chlorophyll *b** were determined by the method of Arar and Collins (1971).

1940

[Faint handwritten notes at the bottom of the page]

100

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

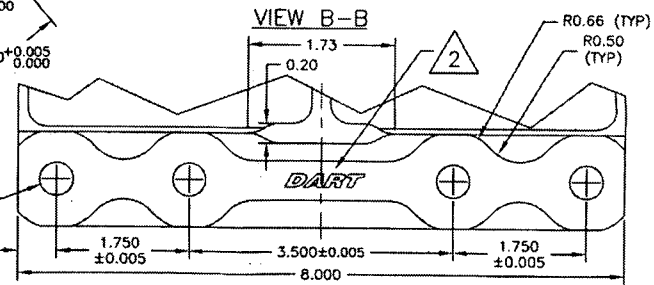
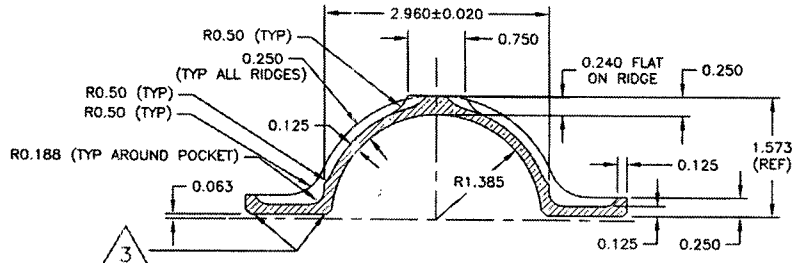
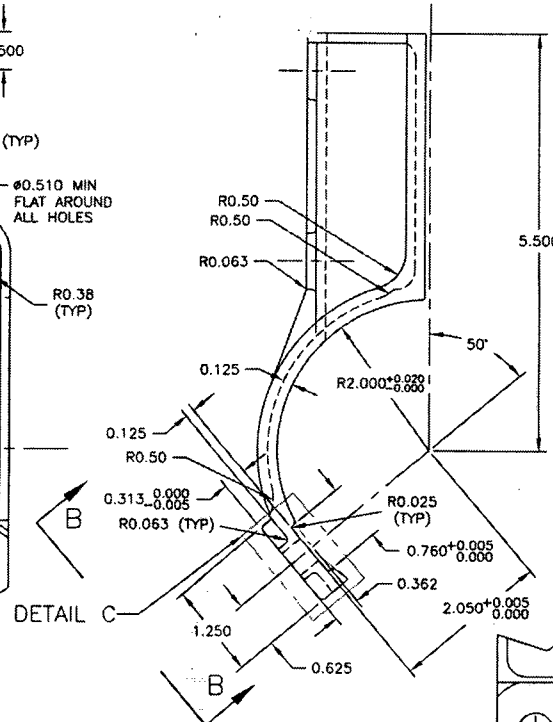
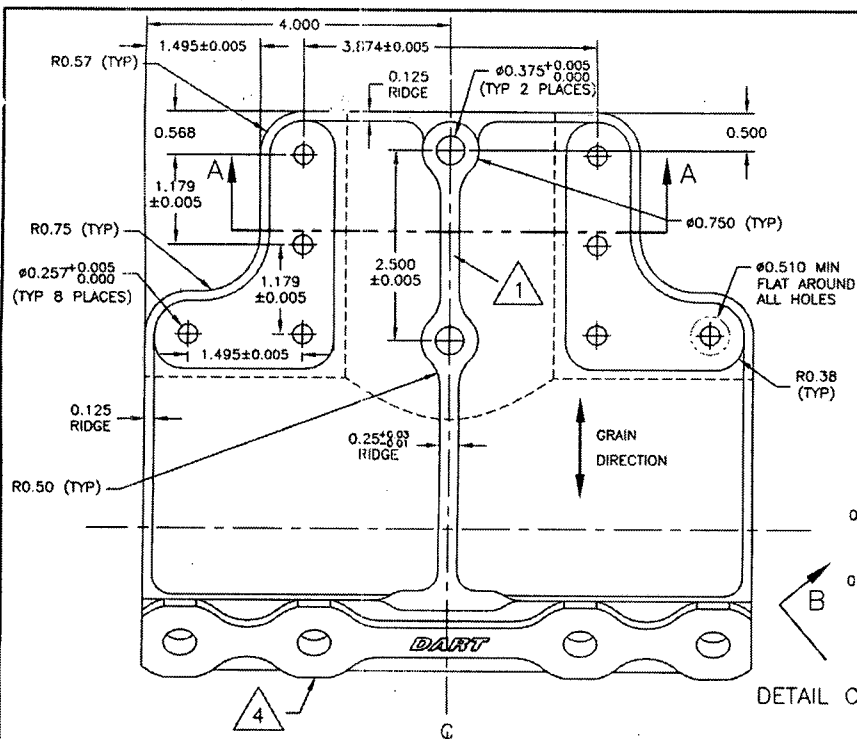
WITHOUT NOTICE
WORK ORDER

NO. 63499 RELEASED
65.12.4

NOTES

MATERIAL: 7075-T7351 (QQ-A-250/12) (REF DART SPEC. D6102-001)
FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BREAK ALL SHARP EDGES 0.010 TO 0.020
TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

- 1 ENGRAVE PART AND BATCH NUMBER IN THIS AREA TO MAX DEPTH OF 0.010
- 2 ENGRAVE DART LOGO TO MAX DEPTH OF 0.015 WITH MIN RAD 0.125
- 3 CHAMFER 0.063" x 45° AROUND THIS SURFACE (TYPICAL 2 PLACES)
- 4 CHAMFER 0.063" x 45° ALL AROUND
- 5 CHAMFER 0.033" x 45° (SEE DETAIL C)



DETAIL C
SCALE 4:3

COPYRIGHT © 2005 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

E	05.07.13	ADD CHAMFER ON RIDGE, NOTE 5
D	02.09.06	ADD RIDGES; TIGHTEN TOLERANCES
C	99.10.22	INCORP. DEO 9123/9079/9102 ADD DIMENSIONS PER TSR A1177
B	96.12.02	ADD GRAIN DIR., 0.438 WAS 0.425
A	96.09.16	NEW ISSUE
DESIGN	DS	DRAWN BY PH
CHECKED	#	APPROVED #
DATE	05.07.13	DRAWING NO. 02571
		TITLE OUTER FWD SADDLE
		REV. E SHEET 1 OF 1 SCALE 2:3

DART DART AEROSPACE LTD.
WARRICKSLEY, ONTARIO, CANADA

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng/ Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries